

2. DESCRIPTION OF GRIZZLY BEAR MANAGEMENT AREA FOR WESTERN MONTANA

Grizzly bears currently, or could in the near future, occupy suitable habitats within the 17 western Montana counties that encompass all or portions of three of the six areas designated as grizzly bear recovery zones in the United States (NCDE, including Glacier National Park; CYE; the Bitterroot Ecosystem) (Figure 2). Currently, there are known populations of grizzly bears in the NCDE and the CYE, and grizzly bears, or their sign, have been seen outside these areas as well. The counties in this portion of western Montana include: Lincoln, Flathead, Glacier, Pondera, Teton, Lewis and Clark, Powell, Missoula, Lake, Sanders, Mineral, Ravalli, Granite, Deer Lodge, Silver Bow, Jefferson, and Broadwater counties (Figure 3).

This chapter briefly describes the geographic and human environment of the 17-county area with respect to general description, size, human population, land ownership and economic interests. It describes the environment as it is today and provides a baseline against which any possible significant impacts, as a result of the proposed program, can be assessed. Moreover, because this DPEIS provides an assessment of issues at a programmatic level and not at the site-specific level, the descriptions of the environment presented in this chapter do not provide detailed information about conditions that exist at specific locations. Rather, these descriptions, coupled with information on bear biology in Chapter 3, provide the level of detail needed to assess the programmatic impacts presented in Chapters 4 and 5.

Not all portions of these counties provide suitable grizzly bear habitat, and some of the above attributes of these counties may affect the distribution and survival of grizzly bears. Given enough time and adequate management programs, grizzly bear distribution could extend beyond this 17-county area. For purposes of this plan, expansion in grizzly bear distribution during the next 10 years is most likely to occur within and adjacent to the designated recovery zones within this 17-county area. It is anticipated that the programs outlined in this plan would apply should grizzlies extend their distribution beyond these counties sooner than anticipated. In addition, the success of our program rests on coordinating and cooperating with surrounding state, provincial, tribal and federal agencies and private landowners. We will continue to work with them so that the needs of the grizzly bear population as a whole are met.

General Description

Most counties in this 17-county area are characterized by one or more river valleys divided by rugged mountain ranges. Glacier, Pondera, and Teton counties are located on the eastern front of the Rocky Mountain range and are characterized mostly by plains. Elevations range from 10,466ft. at Mount Cleveland in Glacier National Park (Montana's fourth highest point) to 1,820 ft. where the Kootenai River enters Idaho near Troy, Montana. Major river drainages include the Clark Fork, Missouri, Kootenai, Flathead, Two Medicine, Teton, Blackfoot, and Boulder rivers. To the south of this area, several rivers converge to form the Upper Missouri River, at Three Forks. Lower elevation habitats (below 6,000 ft.) vary greatly and include large areas of short-grass/sagebrush prairie, mountain foothills, intensively cultivated areas (grain and hay field agriculture), natural wetlands/lakes, riparian plant communities ranging from narrow stream bank zones to extensive cottonwood river bottoms, man-made reservoirs, small communities, and sizeable cities and towns.

The mountainous portion of this 17-county area (above 6,000 ft.) contain all, or portions of, 15 mountain ranges including the Purcell, Salish, Whitefish, Flathead, Coeur d'Alene, Cabinet, Mission, Swan,

Bitterroot, Garnet, Big Belt, Sapphire, Flint Creek, Elkhorn, and Anaconda. The Continental Divide runs through the eastern portion of this area. Mountainous habitats are dominated by coniferous forest (Douglas fir, lodgepole pine, Engelmann spruce, western cedar, hemlock, whitebark pine, limber pine, ponderosa pine, juniper), and rocky sub-alpine/alpine communities found above timberline.

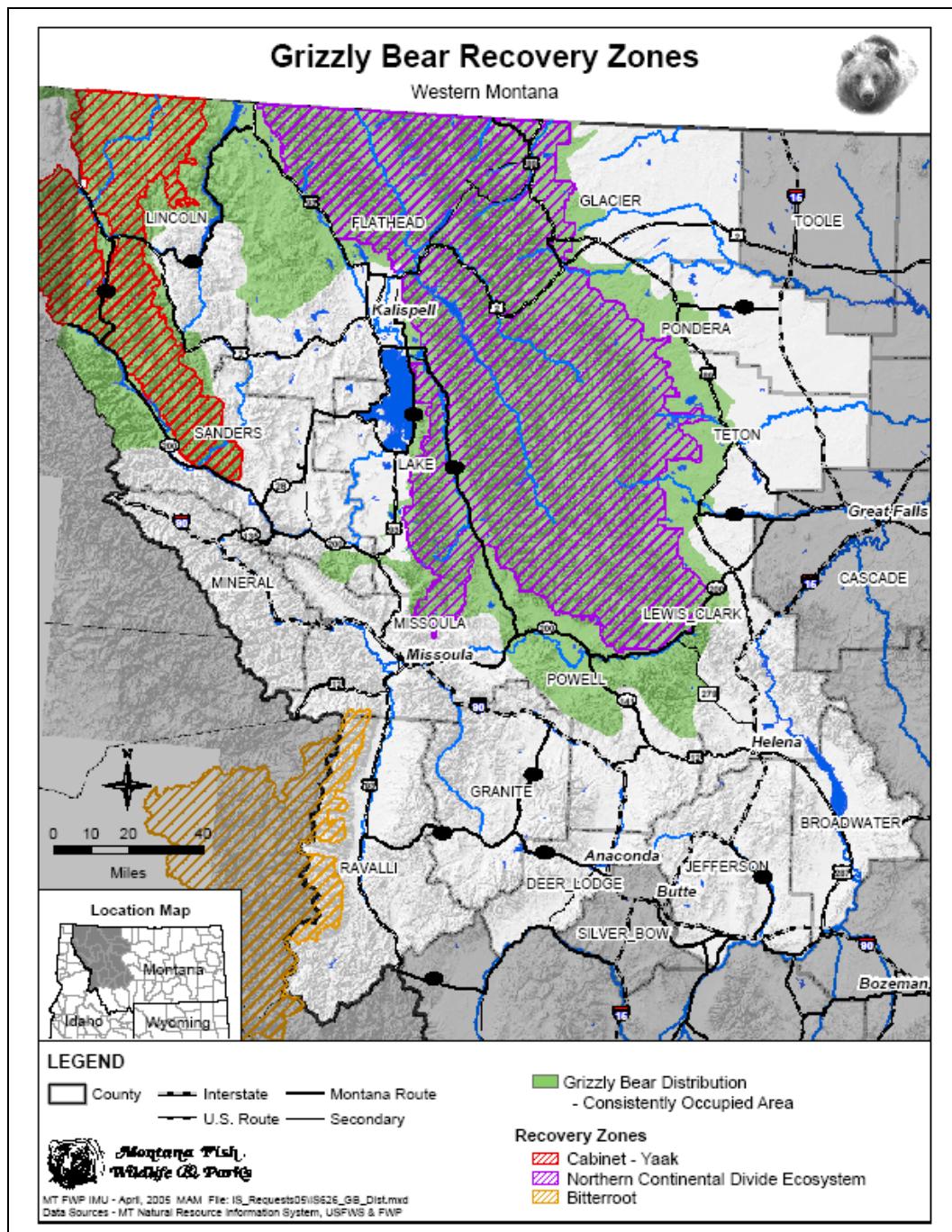


Figure 2. Grizzly bear recovery zones and distribution in western Montana.

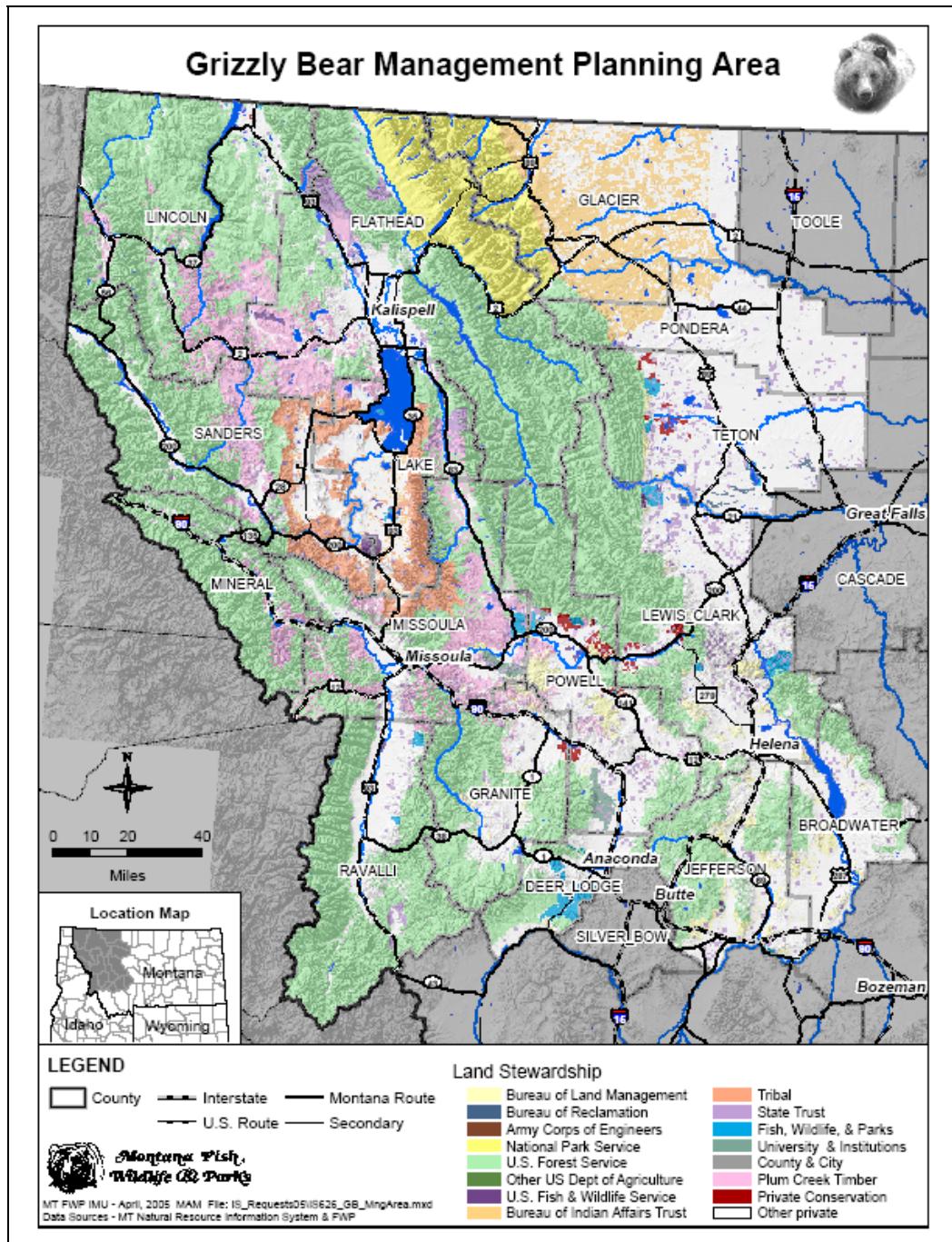


Figure 3. Grizzly bear management planning areas in western Montana.

Size and Human Population

The 17-county area encompasses approximately 24,248,960 acres or 37,889 square miles of western and northwestern Montana (Table 1) and represents approximately 47% of Montana's human population. County population size ranges from Missoula (pop. 99,018) to Granite (pop. 2,853). Population density for the entire area is 12.0 people per square mile, compared to 6.2 people per square mile for the entire

state. The most densely populated county is Silver Bow (46.1 people/sq. mi.) while the least densely populated county is Granite (1.7 people /sq. mi.). Major population centers include Missoula (60,722), Butte (32,519), Helena (26,718), Kalispell (16,391), Anaconda (8,953), Whitefish (5,784), Polson (4,497), Hamilton (4,163), Columbia Falls (3,963), Deer lodge (3,324), Cut Bank (3,096), Conrad (2,657), and Libby (2,606). Within the 17-county area, only these 13 towns and cities exceed a population of 2,000 people.

According to census figures, the population in this area has increased by 16,563 people (3.98%) between 2000 and 2004. During this same period the population of the entire state increased by an estimated 24,670 people or 2.7%. Ravalli County was the fastest growing county, increasing by 3,306 people (9.2%) from 2000 to 2004, while Silver Bow County population decreased by 1,513 people (-4.4%) during the same 4 year period.

Table 1. Geographic size and selected human population attributes of the 17 counties in the grizzly bear conservation management planning area.

County	Size (sq. mi.)	Human Population¹	People per sq. mi	Population Change²
Lincoln	3,613	19,101	5.3	1.4
Flathead	5,098	81,217	15.9	9.1
Glacier	2,995	13,508	4.5	2.0
Pondera	1,625	6,148	3.8	-4.3
Teton	2,273	6,283	2.8	-2.5
Lewis and Clark	3,461	57,972	16.8	4.0
Powell	2,326	6,873	3.0	-4.3
Missoula	2,598	99,018	38.1	3.4
Lake	1,494	27,919	18.7	5.3
Sanders	2,762	10,945	4.0	7.0
Mineral	1,220	3,879	3.2	0.1
Ravalli	2,394	39,376	16.5	9.2
Granite	1,727	2,853	1.7	0.8
Deer Lodge	737	9,088	12.3	-3.5
Silver Bow	718	33,093	46.1	-4.4
Jefferson	1,657	10,857	6.6	8.0
Broadwater	1,191	4,530	3.8	3.3
Totals	37,889	432,660	12.0	n/a

¹Based on 2004 population estimate from U.S. Census Bureau.

²Estimated % population change April 2000 to July 2004 from U.S. Census Bureau.

Land Ownership

The majority of mountainous habitat (above 6,000 ft.) is located within publicly owned National Forests, corporate timber lands and Glacier National Park. All, or portions of, the Kootenai, Kaniksu (part of the Idaho Panhandle National Forest complex), Flathead, Lolo, Bitterroot, Beaverhead-Deerlodge, Helena, and Lewis and Clark National Forests occur within this 17-county area. A small portion of mountainous habitat is in public ownership [Montana Department of Natural Resources and Conservation (DNRC), FWP, and BLM]; private ownership, including private subdivisions, ranches, land trusts, ski resorts and

timber company lands; and Bureau of Indian Affairs trust and tribal lands belonging to the Blackfeet Indian Reservation and Flathead Indian Reservation.

Low-elevation river valleys (below 6,000 ft.) are primarily situated on privately owned or tribal lands with a small proportion located in state (DNRC, FWP) and federal (BLM, USFS, and U.S. National Wildlife Refuge) public ownership. East of the divide, by far the largest amount of low-elevation land lies on privately owned ranches and farms while corporate timber lands and agriculture predominate west of the divide. Small, medium and large-sized communities also occupy several thousand acres of low-elevation river-valley habitat.

Special Management Areas

Several federal and state special management areas are located in the 17-county area. In large part, these areas are protected from human development and provide long-term habitat for a variety of wildlife species, including grizzly bears.

Special Management Areas include Glacier National Park, which covers 1,014,000 acres. Eight National Wilderness Areas lie within mountain ranges in the 17-county area: Bob Marshall Wilderness (1,009,356 acres), in the Flathead, and Lewis and Clark National Forests; Great Bear Wilderness (286,700 acres) and Mission Mountains Wilderness (73,877 acres) in the Flathead National Forest; Scapegoat Wilderness (239,936 acres), in the Helena, Lewis and Clark, and Lolo National Forests; Cabinet Mountains Wilderness (94,272 acres) in the Kootenai National Forest; Rattlesnake Wilderness (32,976 acres) and Welcome Creek Wilderness (28,135 acres) in the Lolo National Forest; and Gates of the Mountains Wilderness (28,562 acres) in the Helena National Forest. Approximately half of the Anaconda-Pintler Wilderness (158,615 acres) in the Beaverhead-Deerlodge National Forest and a significant portion of the Selway-Bitterroot Wilderness (1,089,017 acres) in the Lolo and Bitterroot National Forests occur in this 17-county area as well. National Forest Wilderness Areas have the greatest restrictions on human use and development resulting in the least disturbed habitats available and are important in ensuring long-term grizzly bear survival.

Other special management areas include the Mission Mountains Tribal Wilderness (91,778 acres) in the Flathead Indian Reservation, the National Bison Range Complex (41,000 acres) in Lake and Flathead counties, the Lee Metcalf National Wildlife Refuge (2,800 acres) in Ravalli County, and 14 FWP Wildlife Management Areas (approximately 240,000 acres) in Lincoln, Sanders, Lake, Powell, Missoula, Ravalli, Deer Lodge, Silver Bow, Teton, Lewis and Clark, Cascade, and Broadwater counties.

Agricultural Industry

The 17-county area supports a large agricultural economy. In 2002, there were 8,857 farms and ranches in the 17-county area. By far the most common activities of these farms and ranches are raising beef cattle, growing forage (hay) for cattle, and growing grain crops (wheat, oats, barley). Sheep, hog, and dairy cattle are also raised in smaller numbers on ranches and farms in western and northwestern Montana. Beef cattle and sheep are grazed on privately owned grassland and on publicly owned (USFS, BLM, DNRC) grazing allotments. Some of these allotments occur in higher elevation habitats occupied by grizzly bears. Livestock depredation by grizzly bears is an issue that will continue to affect grizzly bear numbers, management and distribution.

Based on updated Montana agricultural statistics for 2005, there were an estimated 386,900 head of cattle (all cattle and calves) in the 17-county area (Table 2). Teton County had the most cattle (45,000 head) while Mineral County supported the fewest (700 head). In terms of cattle production, Teton county ranked 19th while Mineral ranked 56th out of Montana's 56 counties. Since 1940, total cattle numbers statewide have increased from 1.2 million to 2.4 million head with a peak of over 3.2 million head in the mid-1970s.

Table 2. Selected agricultural attributes of the 17 counties in the grizzly bear conservation management planning area.

County	# Cattle ¹	# Sheep ²	Acres Crops Harvested ³	# Apiary Sites ⁴	# Bee Hives ⁴
Lincoln	2,900	323	9,188	53	1,177
Flathead	11,900	599	81,462	70	1,197
Glacier	43,000	535	274,890	41	1,002
Pondera	23,300	4,425	307,976	87	3,214
Teton	45,000	6,816	321,043	132	4,093
Lewis and Clark	40,000	3,776	60,471	92	2,579
Powell	41,000	851	57,656	96	2,401
Missoula	8,700	1,770	22,290	150	3,495
Lake	44,000	1,743	78,680	120	3,563
Sanders	17,600	553	31,942	120	5,028
Mineral	700	71	2,746	17	468
Ravalli	34,000	4,473	48,933	147	6,543
Granite	21,300	457	27,091	49	1,265
Deer Lodge	8,900	1,065	13,765	28	816
Silver Bow	5,700	291	6,308	19	649
Jefferson	22,300	751	27,260	43	1,526
Broadwater	16,600	(D) ⁵	81,222	63	2,520
Totals	386,900	28,499	1,452,923	1,327	41,536

¹Inventory estimates of all cattle and calves for year 2005, from Montana Agricultural Statistics Service, Volume 1, 2005.

²Inventory estimates of all sheep and lambs for year 2002 from Montana Agricultural Statistics Service, Volume 1, 2002.

³Estimates of acres harvested in 2002, from Montana Agriculture Statistics Services, Volume 1, 2002.

⁴Information provided by Montana Department of Agriculture, pers. comm. Patricia Denke, 2006.

⁵Withheld to avoid disclosing data for individual farms.

In 2002, there were an estimated 28,500 sheep (all sheep and lambs) in the 17-county area. Teton County had the largest number of sheep (6,816) while Mineral County had the fewest sheep (71). In terms of statewide sheep production, Teton County ranked 12th while Mineral had too few sheep to merit a ranking. Statewide, since 1940, sheep production has steadily declined from over 4.2 million to about 305,500 head. Based on 2002 data, an estimated 1,453,000 acres of crops were harvested in the 17-county area. Crop harvest ranged from 321,043 acres in Teton County to 2,746 acres in Mineral County.

Since Montana is predominately a cereal grain and livestock producing state, traditional horticultural enterprises account for only about 2.5% of the total agricultural income. While some horticultural enterprises are generally distributed throughout the state, others, such as sweet and sour cherry

production are concentrated as a result of factors such as climate. Sweet-cherry production is primarily located to in the vicinity of Flathead Lake, where 1,200-1,400 acres are devoted principally to production of the cultivar 'Lambert'. Commercial sour-cherry production in Montana tends to be restricted to the Bitterroot Valley, where about 300 acres are devoted to production of the principal cultivar 'Montmorency'. In addition, honey production enterprises are found throughout western Montana. In 2005, Ravalli, Missoula and Teton Counties supported the largest number of honeybee sites in the 17-county area, ranking 1st, 2nd and 3rd respectively (Table 2). Rankings varied in terms of actual numbers of hives, however; Ravalli, Sanders and Teton counties respectively reported the largest number of active beehives.

Mining Industry

Large mineral deposits, ranging from talc to gold, are located throughout western Montana. Of these, metallic minerals provide the largest share of Montana's non-fuel mining income, with copper and gold leading the list of important metals. Based on data compiled in 2001, western Montana supports a total of 91 mine sites. Thirty-two sites are valued for the metal content of the ores produced and 59 sites are involved with the production of industrial or saleable commodities. Major mines whose production serves markets outside of the state include three gold mines, one platinum mine, one copper/molybdenum mine, three talc mines and four limestone quarries. Production from the remaining mines serves local markets and operations tend to be intermittent or seasonal.

With the recent rise in commodity prices, mining interest and activity in the western portion of the State has increased. Within the Cabinet-Yaak area, in 2004, the Genesis Troy copper/silver mine, a subsidiary of Revett Silver, resumed production. In addition, two proposed mines are currently under deliberation. The proposed Rock Creek copper/silver mine would be located on the west slope of the Cabinet mountain range, while the Montanore copper/silver mine, would be on the east slope. Thus, there is the potential for several large-scale mineral mines to become operational in the future.

In addition to non-fuel mining, oil and gas development activity is concentrated along the Rocky Mountain Front. Other potential sites for development include the North Fork of the Flathead, in British Columbia, adjacent to the NCDE.

Timber Industry

The majority of Montana's forested lands (23 million acres) are located within the western part of the state. Nearly 4 million acres of these forest lands are permanently reserved as either wilderness areas or National Parks. Eleven million acres of the remaining forested land is administered by the USFS, with 5.2 million acres of this public estate designated by current forest plans as suitable for timber production. Private forest lands occupy approximately 6 million acres, with 2 million owned and managed by timber companies like Plum Creek, F. H. Stoltze Land and Lumber Company and R-Y Timber. Another four million acres of private forest lands are owned by some 11,000-plus private individuals.

Within the state, total timber production over the past two decades has fallen from an annual high of approximately 1.2 billion board feet (BBF) in the mid 1980s to an estimated 700 MMBF in 2004 (Figure 4). The reduction can be attributed primarily to a 70% decline in timber harvested from national forests. Harvests from other ownership categories have remained relatively stable during the period with much of the year-to-year fluctuation driven by changing market conditions.

In general, Montana's estimated timber harvest for 2004 was about equal to 2003 levels, with private harvest rising slightly in response to slightly higher prices. Based on data for 2003, 70% of the timber harvested in Montana was from private lands, national forests supplied 20 percent and all other ownerships accounted for 10%.

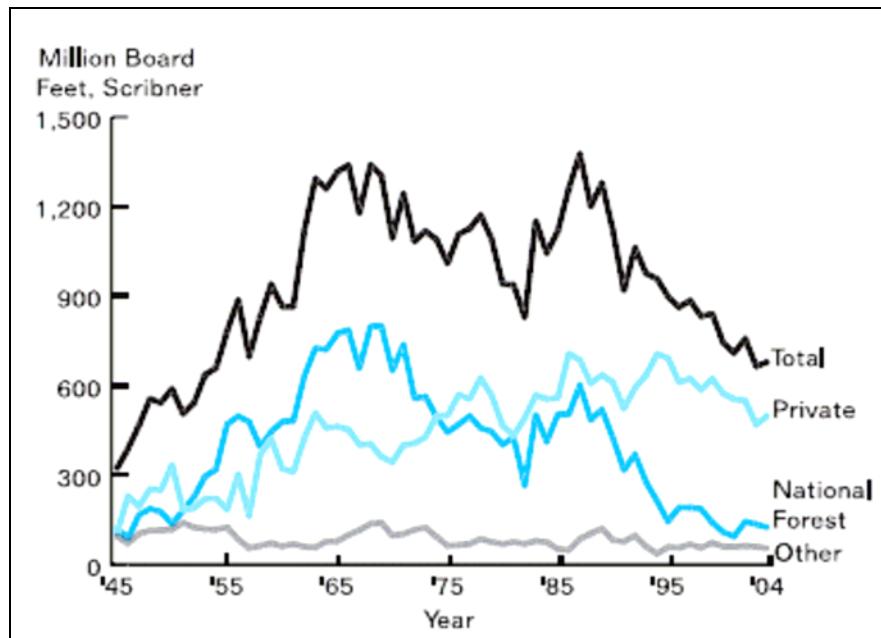


Figure 4: Montana timber harvested by ownership 1945-2004.

Source: Bureau of Business and Economic Research, The University of Montana-Missoula:
USDA Forest Service Region One, Missoula, Montana.

Recreational Opportunities

Outdoor recreation and tourism is a major component of the economy in this 17-county area. Western Montana is nationally renowned for its high quality fishing, hunting, camping, hiking, river floating, skiing, snowmobiling, wildlife viewing and sightseeing opportunities. Nearby, Glacier National Park and Flathead Lake attract large numbers of people to the area every year. Many of these outdoor activities are made possible by public ownership of large tracts of mountainous habitat and additional access provided by many private landowners.

Recreationists have largely unhindered access to millions of acres of undeveloped land. Some of this land is currently, or based on documented trends of increasing distribution will be, occupied by grizzly bears. As bear numbers and distribution increase, and the number of outdoor enthusiasts grow, contact and interaction with people engaged in outdoor activities is likely to increase.